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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

OHS 7/8/57

P. O. Box 3391
Orlando, Florida
July 5, 1957

AIRMAIL

To: A. W. Lindquist, Head, Insects Affecting Man and Animals
Section, Plant Industry Station, Beltsville, Maryland

From: R. C. Bushland

Subject: Weekly Report--6/23 through 6/29/57

Attached are two tables of data summarizing last week's findings.

You will note that there was not much change from the preceding week. We were disappointed that we failed to attain 50 percent sterility in pens 9-12. However, the average of better than 40 percent sterility for two successive weeks encourages us to believe that our released flies are mating with a significant number of native flies in the most isolated part of the test area. So far this week the daily records for the first part of July are running about the same as for the last two weeks in June.

You will note that we exceeded the quota of 2,000,000 flies by about 10 percent. This is only the second time that we have put out more than 2,000,000 flies in a week and the average for the test is less than 2,000,000. Since we got 40 percent sterility at the rate of 500 males per square mile under outbreak conditions, it seems that the proposal in the prospectus of March 22 of 800 males per square mile for the most heavily infested areas will be adequate to cause better than 50 percent sterility if an eradication program develops.

From Monday through Wednesday Mr. Skipper traveled with Rowland Richards and me to start field tests with sprays of 21/199 on range cattle. This trip delayed assembly of the case incidence records so Mr. Skipper's data will be reported next week.

(In triplicate)

cc: Dr. Sharman (4)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-5-57

Table 1.--Egg mass data, week of 6/23 through 6/29/57

Pen : number:	Location	: Total: masses:	:Sterile: masses :	Group total	:Percent sterile
1	15 miles north of treated area	40	1		
2		104	0		
3		30	0		
4		11	2	185	1.6
5	Near center of treated area	29	14		
6		30	2		
7		33	6		
8		12	4	104	25.0
9	Southeast of center of treated area	27	14		
9a		41	13		
9b		115	49		
10		33	10		
11		28	17		
12		0	0	244	42.1
13	14 miles south of treated area	13	0		
14		4	0		
15		6	0		
16		13	2	36	5.6
17	12 miles west of treated area	9	1		
18		3	0		
19		7	0		
20		5	0	24	4.2

Table 2.--Fly release data, week of 6/23 through 6/29/57

Date (1957)	: :	Number of boxes	: :	Approximate number of flies
6/24		764		305,600
6/25		675		252,900
6/26		924		415,800
6/27		1,213		485,200
6/28		995		398,000
6/29		977		390,800
Total		5,548		2,248,300

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

P. O. Box 3391
Orlando, Florida
July 10, 1957

AIRMAIL

To: A. W. Lindquist, Head, Insects Affecting Man and Animals
Section, Plant Industry Station, Beltsville, Maryland

From: C. L. Smith

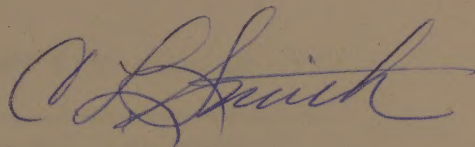
Subject: Weekly Report--6/30 through 7/6/57

Attached are two tables of data summarizing the results of last week's findings in the screw-worm test area.

You will note that there is not a greatly significant change from the results obtained the preceding week. By employing corrective measures mentioned in a previous report, better emergence from the pupal stage is being obtained. This enabled us to release approximately 2,226,500 flies during the week.

During the past two weeks all five groups of pens have shown a marked decrease in the weekly average number of egg masses collected per pen.

As mentioned in the last paragraph of Dr. Bushland's report of July 5, Mr. Skipper was to summarize the case incidence results in the test area, but he still has not been able to find time to make this summarization. Perhaps he will be able to do this the latter part of the week and if so, it will be included in the next report.



(In triplicate)

cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-10-57

Table 1.--Egg mass data, week of 6/30 through 7/6/57

Pen : number:	Location	: Total: : masses:	Sterile: : masses:	Group : total	:Percent :sterile
1	15 miles north of treated area	30	2		
2		65	0		
3		12	2		
4		4	0	111	3.6
5	Near center of treated area	19	5		
6		38	7		
7		17	4		
8		14	8	88	27.3
9	Southeast of center of treated area	51	20		
9a		44	19		
9b		33	8		
10		41	19		
11		25	13		
12		0	0	194	40.7
13	14 miles south of treated area	6	0		
14		0	0		
15		6	0		
16		6	0	18	0
17	12 miles west of treated area	5	0		
18		1	0		
19		4	0		
20		8	0	18	0

Table 2.--Fly release data, week of 6/30 through 7/6/57

Date : (1957) :	Number of boxes	: :	Approximate number of flies
7/1	399		199,500
7/2	329		164,500
7/3	690		345,000
7/4	1,264		632,000
7/5	1,584		792,000
7/6	187		93,500
Total	4,453		2,226,500

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From: C. L. Smith

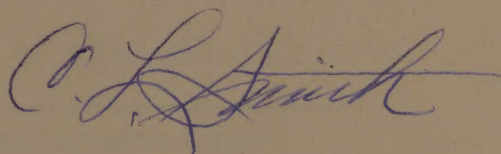
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(In triplicate)

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Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-10-57

Table 1.--Egg mass data, week of 6/30 through 7/6/57

Pen : number:	Location	: Total: : masses:	: Sterile: : masses:	: Group : total	: Percent : sterile
1	15 miles north of treated area	30	2		
2		65	0		
3		12	2		
4		4	0	111	3.6
5	Near center of treated area	19	5		
6		38	7		
7		17	4		
8		14	8	88	27.3
9	Southeast of center of treated area	51	20		
9a		44	19		
9b		33	8		
10		41	19		
11		25	13		
12		0	0	194	40.7
13	14 miles south of treated area	6	0		
14		0	0		
15		6	0		
16		6	0	18	0
17	12 miles west of treated area	5	0		
18		1	0		
19		4	0		
20		8	0	18	0

Table 2.--Fly release data, week of 6/30 through 7/6/57

Date : (1957) :	Number of boxes	: :	Approximate number of flies
7/1	399		199,500
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7/4	1,264		632,000
7/5	1,584		792,000
7/6	187		93,500
Total	4,453		2,226,500

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

P. O. Box 3391
Orlando, Florida
July 16, 1957

AIRMAIL

To: A. W. Lindquist, Head, Insects Affecting Man and Animals
Section, Plant Industry Station, Beltsville, Maryland

From: C. L. Smith

Subject: Weekly Report--7/7 through 7/13/57

Tables are attached containing data on egg mass collections made and the number of sterile screw-worm flies released during the past week. A third table contains data on screw-worm case incidence as reported by rancher cooperators during the past three weeks.

Egg mass collections continued to decline in all locations except in the northern check area where a slight increase was noted. Sterility of egg masses collected increased appreciably in the treated area--27.3 to 40.0 percent at pens 5 through 8. A lesser increase was noted at pens 9 through 11--40.7 to 44.7 percent. In view of the steady decline in egg mass collections the outlook for a high rate of egg mass sterility in the near future appears good.

Fly emergence continued at a satisfactory level and approximately 2.3 million flies were released during the week.

Pen 12 was discontinued because of its failure to yield any egg masses during the last two weeks of its operation 6/23 through 7/6/57. However, five pens remain to adequately sample this area.

Additional personnel have been promised to aid in obtaining case incidence records from rancher cooperators. It is planned to increase the area being surveyed to determine if the current decline in screw-worm incidence is general in areas up to 50 miles from the treated area. Survey personnel have been instructed to enlist rancher cooperation in making egg mass collections to supplement data being obtained from the wounded goats.

(In triplicate)

cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-16-57

Table 1.--Egg mass data, week of 7/7 through 7/13/57

Pen : number:	Location	: Total: masses:	Sterile: masses :	Group total	:Percent sterile
1	15 miles north of treated area	51	1		
2		55	0		
3		11	0		
4		4	0	121	0.8
5	Near center of treated area	9	6		
6		28	9		
7		12	6		
8		21	7	70	40.0
9	Southeast of center of treated area	28	12		
9a		23	15		
9b		33	13		
10		16	6		
11		3	0	103	44.7
12		(discontinued)			
13	14 miles south of treated area	1	0		
14		2	0		
15		3	0		
16		7	0	13	0
17	12 miles west of treated area	0	0		
18		0	0		
19		2	0		
20		4	0	6	0

Table 2.--Fly release data, week of 7/7 through 7/13/57

Date (1957)	: Number of boxes	: Approximate number of flies
7/8	454	227,000
7/9	716	358,000
7/10	896	448,000
7/11	862	431,000
7/12	873	436,500
7/13	816	408,000
Total	4,617	2,308,500

3-A. W. Lindquist-7-16-57

Table 3.---Screw-worm case incidence as reported by rancher
cooperators (1957.)

Number of :		Cases	Cases	Cases
cooperators:Total acreage:		6/16-22	6/23-29	6/30-7/6
<u>North check area (near goat pens 1-4)</u>				
5	22,010	63	44	41
<u>Fly release area (near goat pens 5-12)</u>				
18	448,560	368	328	308
<u>South check area (near goat pens 13-16)</u>				
4	74,000	79	42	28
<u>West check area (near goat pens 17-20)</u>				
8	211,880	54	36	44

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P. O. Box 3391
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July 16, 1957

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From: C. L. Smith

Subject: Weekly Report--7/7 through 7/13/57

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Fly emergence continued at a satisfactory level and approximately 2.3 million flies were released during the week.

Pen 12 was discontinued because of its failure to yield any egg masses during the last two weeks of its operation 6/23 through 7/6/57. However, five pens remain to adequately sample this area.

Additional personnel have been promised to aid in obtaining case incidence records from rancher cooperators. It is planned to increase the area being surveyed to determine if the current decline in screw-worm incidence is general in areas up to 50 miles from the treated area. Survey personnel have been instructed to enlist rancher cooperation in making egg mass collections to supplement data being obtained from the wounded goats.

(In triplicate)

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Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-16-57

Table 1.--Egg mass data, week of 7/7 through 7/13/57

Pen : number:	Location	: Total: : masses:	: Sterile: : masses :	Group : total	: Percent : sterile
1	15 miles north of treated area	51	1		
2		55	0		
3		11	0		
4		4	0	121	0.8
5	Near center of treated area	9	6		
6		28	9		
7		12	6		
8		21	7	70	40.0
9	Southeast of center of treated area	28	12		
9a		23	15		
9b		33	13		
10		16	6		
11		3	0	103	44.7
12		(discontinued)			
13	14 miles south of treated area	1	0		
14		2	0		
15		3	0		
16		7	0	13	0
17	12 miles west of treated area	0	0		
18		0	0		
19		2	0		
20		4	0	6	0

Table 2.--Fly release data, week of 7/7 through 7/13/57

Date : (1957) :	Number of boxes :	Approximate number of flies
7/8	454	227,000
7/9	716	358,000
7/10	896	448,000
7/11	862	431,000
7/12	873	436,500
7/13	816	408,000
Total	4,617	2,308,500

3-A. W. Lindquist-7-16-57

Table 3.--Screw-worm case incidence as reported by rancher
cooperators (1957.)

Number of :		Cases	Cases	Cases
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18	448,560	368	328	308
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4	74,000	79	42	28
<u>West check area (near goat pens 17-20)</u>				
8	211,880	54	36	44

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

JUL 30 1957

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P. O. Box 3391
Orlando, Florida
July 23, 1957

AIRMAIL

To: A. W. Lindquist, Branch Chief, Insects Affecting Man and
Animals, Plant Industry Station, Beltsville, Maryland

From: R. C. Bushland

Subject: Weekly Report--7/14-7/20/57

Enclosed are three tables of records on the field test for the week ending July 20.

Table 1 shows by far the best results we have attained so far in the experiment. Of 97 egg masses collected in pens 9-11, 76 percent were sterile. (Pen 12 was dropped from the experiment since for the preceding month it yielded almost no egg masses and even earlier was a very poor producing location.) Pens 5-8 furnished 56 egg masses of which 62 percent did not hatch.

There has been a steady decline in the number of egg masses from the treated area since the first week in June when screw-worm activity was at a peak. Records on pens 5-8 are as follows:

6/2-6/8--182 egg masses--10% sterile
6/9-6/15--160 egg masses--9% sterile
6/16-6/22--186 egg masses--25% sterile
6/23-6/29--104 egg masses--25% sterile
6/30-7/6--88 egg masses--27% sterile
7/7-7/13--70 egg masses--40% sterile
7/14-7/20--56 egg masses--62% sterile

Pens 9-11 in the most isolated part of the test area produced as follows:

6/2-6/8--367 egg masses--19% sterile
6/9-6/15--410 egg masses--25% sterile
6/16-6/22--328 egg masses--40% sterile
6/23-6/29--224 egg masses--42% sterile
6/30-7/6--194 egg masses--41% sterile
7/7-7/13--103 egg masses--45% sterile
7/14-7/20--97 egg masses--76% sterile

2-A. W. Lindquist-7-23-57

The marked increase in sterility must be attributed to a natural decline in native fly activity rather than to greater efficiency of sterilized fly releases since we have continued to release about 500 sterile males per square mile per week among a native population that has declined because of adverse breeding conditions. The decrease in fly activity within the treated area cannot be credited to control by sterilized flies because there has been an even greater decline in egg masses taken in check pens south and west of the treated area.

Check pens 1-4 located 15 miles north of the treated area have not shown as great a decline in egg masses as either pens 5-8 or 9-11. Therefore if we could compare the treated area only with the north check area we might be able to claim a reduction in population due to release of sterilized flies. However, since there was a decline in the other two check areas in the absence of sterilized flies such a comparison may not be valid.

The livestock case incidence records obtained from cooperating ranchers and tabulated in our reports of 6/26 and 7/16 also show a similar decline in fly activity. This seasonal decline was expected as a result of the end of the calving season with a corresponding decrease in wounds and with the onset of the summer rains which drown pupae in the flooded pastures.

The calving season ended more or less uniformly in the release area and the three check areas.

Because the rain comes in local thundershowers there have been variations, but in general the weekly total rainfall has been quite uniform. Rainfall records since the start of the experiment are shown in table 3. It will be noted that over the area rain has averaged about 1.5 inches per week. The greater decline in screw-worm activity in the south and west check areas cannot be attributed to heavier rainfall.

(In triplicate)

cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

3-A. W. Lindquist-7-23-57

Table 1.--Egg mass data, week of 7/14 through 7/20/57.

Pen : number:	Location	: Total: :masses:	Sterile: masses :	Group total	:Percent :sterile
1	15 miles north of treated area	41	0		
2		35	1		
3		9	2		
4		9	0	94	3.2
5	Near center of treated area	21	13		
6		15	8		
7		11	8		
8		9	6	56	62.5
9	Southeast of center of treated area	10	9		
9a		24	20		
9b		27	22		
10		20	12		
11		16	11	97	76.3
13	14 miles south of treated area	2	0		
14		2	0		
15		0	0		
16		2	0	6	0
17	12 miles west of treated area	0	0		
18		0	0		
19		4	3		
20		4	1	8	50.0

Table 2.--Fly release data, week of 7/14 through 7/20/57

Date : (1957) :	Number of boxes	: :	Approximate number of flies
7/15	605		290,400
7/16	1,049		503,520
7/17	930		446,400
7/18	840		403,200
7/19	1,314		630,720
7/20	<u>593</u>		<u>284,640</u>
Total	5,331		2,558,880

4-A. W. Lindquist-7-23-57

Table 3.--Weekly rainfall records.

County	Week ending											Average total
	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21	6/28	7/5	7/12	
North check area												
Volusia	0.74 2.36	0.65 0.80	0.65 3.39	1.76 3.59	0.23 3.40	1.76 1.34	1.76 1.70	0.13 0.00	0.55 --	1.87 1.67	2.56 --	
Seminole	0.91	0.19	4.11	0.50	0.24	1.33	1.63	0.00	2.20	2.50	2.80	
Orange	<u>1.63</u>	<u>0.35</u>	<u>2.18</u>	<u>0.51</u>	<u>3.92</u>	<u>1.13</u>	<u>1.17</u>	<u>0.03</u>	<u>2.00</u>	<u>0.69</u>	<u>0.47</u>	
Average	1.41	0.50	2.58	1.59	1.95	1.66	1.56	0.04	1.58	1.68	1.94	16.49
Release area												
Brevard	1.08	0.14	3.55	2.69	0.41	1.09	--	0.00	--	--	--	
Osceola	0.60	0.25 0.05	5.72 --	0.06 0.80	0.76 2.00	3.48	1.82	0.23	4.04	2.59	2.30	
Indian River	2.43 <u>1.45</u>	0.10 <u>0.13</u>	2.14 <u>1.61</u>	1.47 <u>0.60</u>	--	--	--	--	--	2.74	0.79	
Average	1.39	0.13	3.25	1.12	1.06	2.28	1.82	0.12	4.04	2.66	1.54	19.41
West check area												
Polk	0.88 2.39 <u>0.75</u>	0.00 1.13 <u>0.14</u>	7.31 5.63 <u>4.25</u>	0.29 0.30 --	1.44 1.07 <u>0.10</u>	0.86 1.82 <u>1.36</u>	1.11 0.58 <u>0.67</u>	0.00 0.04 <u>0.26</u>	1.69 1.54 <u>1.42</u>	0.95 0.29 <u>0.82</u>	4.04 3.01 --	
Average	1.34	0.42	5.73	0.30	0.87	1.34	0.79	0.10	1.55	0.69	3.52	16.65
South check area												
St. Lucie	2.55	0.28	3.44	0.36	0.08	0.26	1.63	0.00	2.23	3.53	3.96	
Okeecho-bee	<u>0.64</u>	<u>0.11</u>	<u>2.45</u>	<u>1.47</u>	<u>0.69</u>	<u>0.01</u>	<u>1.44</u>	<u>0.00</u>	<u>--</u>	<u>2.36</u>	<u>2.18</u>	
Average	1.60	0.20	2.94	0.92	0.38	0.14	1.53	0.00	2.23	2.95	3.07	15.96

Summary of 1957 Florida screw-worm field test showing total egg masses and sterile egg masses in weekly goat pen collections.

Week ending :	Check area			Release area	
	North	South	West	Center	East
5/4	11 ^{1/} -0 ^{2/}	10-0	0-0	75-0	12-0
5/11	61-1	61-0	32-0	214-10	39-3
5/18	92-4	72-0	50-4	283-15	11-0
5/25	144-2	100-1	44-4	151-15	47-11
6/1	184-10	94-1	43-1	119-5	188-45
6/8	140-1	102-3	45-1	182-18	376-72
6/15	133-2	96-2	56-0	160-14	415-104
6/22	200-0	78-0	30-0	186-47	333-133
6/29	185-3	36-2	24-1	104-26	244-103
7/6	111-4	18-0	18-0	88-24	194-79
7/13	121-1	13-0	6-0	70-28	103-46
7/20	94-3	6-0	8-4	56-35	97-74

1/ Total (fertile plus sterile) egg masses.

2/ Number of egg masses failing to hatch.

Reports SW

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

July 29, 1957 *CHZ* 8/4/57

To: A. W. Lindquist, Chief, Insects Affecting Man and
Animals Branch, Plant Industry Station,
Beltsville, Maryland

From: R. C. Bushland

Subject: Weekly Report--7/21 through 7/27/57

Enclosed are two tables of data summarizing last week's records on the screw-worm field test.

You will note that the results are similar to those recorded for the preceding week and discussed at length in the report of July 23. These data seem to fit the pattern of the Curacao eradication experiment and if they continue to follow this pattern we would expect around 70 percent sterility for one or two more weeks. This relatively high proportion of sterile egg masses should depress the population so that native flies will be even more out-numbered during the next generation with a resulting distinct increase in percent sterility expected around the middle of August.

(In triplicate)
cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

2-A. W. Lindquist-7-29-57

Table 1.--Egg mass data, week of 7/21 through 7/27/57

Pen : number:	Location	: Total: :masses:	Sterile: :masses :	Group : total	:Percent :sterile
1	15 miles north of treated area	61	4		
2		70	12		
3		12	1		
4		11	0	154	11.0
5	Near center of treated area	11	6		
6		14	12		
7		5	3		
8		3	2	33	69.7
9	Southeast of center of treated area	7	3		
9a		24	16		
9b		21	16		
10		5	3		
11		8	7	65	69.2
13	14 miles south of treated area	1	0		
14		8	0		
15		0	0		
16		0	0	9	0
17	12 miles west of treated area	3	0		
18		0	0		
19		0	0		
20		1	0	4	0

Table 2.--Fly release data, week of 7/21 through 7/27/57

Date (1957)	: :	Number of boxes	: :	Approximate number of flies
7/22		711		337,725
7/23		933		443,175
7/24		446		211,850
7/25		1,084		514,900
7/26		749		355,775
7/27		818		388,550
Total		4,741		2,251,975

